SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name: L-Methionine
Product Number: M6039
Brand: Sigma
CAS-No.: 63-68-3

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company: Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES
Telephone: +1 314 771-5765
Fax: +1 800 325-5052

1.4 Emergency telephone

Emergency Phone #: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements

Not a hazardous substance or mixture.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.1 Substances

Formula: C5H11NO2S
Molecular weight: 149.21 g/mol
CAS-No.: 63-68-3
EC-No.: 200-562-9

Sigma - M6039
No components need to be disclosed according to the applicable regulations.

SECTION 4: First aid measures

4.1 Description of first-aid measures

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact
Wash off with soap and plenty of water.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides
Nitrogen oxides (NOx)
Sulfur oxides
Combustible.

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Avoid dust formation. Avoid breathing vapors, mist or gas.
For personal protection see section 8.

6.2 Environmental precautions
No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Keep in suitable, closed containers for disposal.
6.4  Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1  Precautions for safe handling

Advice on safe handling
Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Advice on protection against fire and explosion
Provide appropriate exhaust ventilation at places where dust is formed.

Hygiene measures
General industrial hygiene practice.
For precautions see section 2.2.

7.2  Conditions for safe storage, including any incompatibilities

Storage conditions
Keep container tightly closed in a dry and well-ventilated place.

Storage class
Storage class (TRGS 510): 13: Non Combustible Solids

7.3  Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1  Control parameters

Ingredients with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2  Exposure controls

Appropriate engineering controls
General industrial hygiene practice.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)
Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)
data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Body Protection**
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**
No special environmental precautions required.

---

**SECTION 9: Physical and chemical properties**

9.1 **Information on basic physical and chemical properties**

- **a) Appearance**
  - Form: crystalline
  - Color: colorless

- **b) Odor**
  - characteristic

- **c) Odor Threshold**
  - No data available

- **d) pH**
  - 5 - 7 at 10 g/l at 20 °C (68 °F)

- **e) Melting point/freezing point**
  - Melting point: 280 - 282 °C (536 - 540 °F) - Decomposition

- **f) Initial boiling point and boiling range**
  - 276 - 284 °C 529 - 543 °F - Decomposes below the boiling point.

- **g) Flash point**
  - () No data available

- **h) Evaporation rate**
  - No data available

- **i) Flammability (solid, gas)**
  - The product is not flammable.

- **j) Upper/lower flammability or explosive limits**
  - No data available

- **k) Vapor pressure**
  - No data available
l) Vapor density  No data available  
m) Density  1.34 g/cm³ at 20 °C (68 °F)  
   Relative density  No data available  
n) Water solubility  soluble  
o) Partition coefficient:  log Pow: -1.87 at 30 °C (86 °F) - Bioaccumulation is not expected.  
p) Autoignition temperature  213 °C (415 °F) - Relative self-ignition temperature for solids  
q) Decomposition temperature  280 - 282 °C (536 - 540 °F) -  
r) Viscosity  No data available  
s) Explosive properties  No data available  
t) Oxidizing properties  none  

9.2 Other safety information  
   Bulk density  ca.550 kg/m³  
   Surface tension  68.3 mN/m at 1g/l at 20 °C (68 °F) - OECD Test Guideline 115  
   Dissociation constant  2.28 at 25 °C (77 °F)  

SECTION 10: Stability and reactivity  

10.1 Reactivity  
No data available  

10.2 Chemical stability  
Stable under recommended storage conditions.  

10.3 Possibility of hazardous reactions  
No data available  

10.4 Conditions to avoid  
No data available  

10.5 Incompatible materials  
Strong oxidizing agents  

10.6 Hazardous decomposition products  
In the event of fire: see section 5  

SECTION 11: Toxicological information  

11.1 Information on toxicological effects  

   Acute toxicity  
   LD₅₀ Oral - Rat - male and female - > 10,000 mg/kg  
   (OECD Test Guideline 401)  
   Inhalation: No data available  
   Dermal: No data available  
   No data available  

Sigma - M6039  

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada
**Skin corrosion/irritation**
Skin - Rabbit
Result: No skin irritation - 4 h
(OECD Test Guideline 404)

**Serious eye damage/eye irritation**
Eyes - Rabbit
Result: No eye irritation
(OECD Test Guideline 405)

**Respiratory or skin sensitization**
Buehler Test - Guinea pig
Result: negative
(OECD Test Guideline 406)

**Germ cell mutagenicity**
Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Result: negative
Remarks: (ECHA)
Test Type: In vitro mammalian cell gene mutation test
Test system: Mouse lymphoma test
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

**Carcinogenicity**
IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
No data available

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

### 11.2 Additional Information

Repeated dose toxicity - Rat - male - Feed - 90 d - NOAEL (No observed adverse effect level) - > 1,474 mg/kg

RTECS: PD0457000
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Essential amino acid.

No toxic effects are to be expected when the product is handled appropriately.
SECTION 12: Ecological information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Toxicity to</th>
<th>Test Method</th>
<th>Compound</th>
<th>Concentration</th>
<th>Exposure Time</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>fish</td>
<td>semi-static test LC50</td>
<td>Danio rerio (zebra fish)</td>
<td>&gt; 3,200 mg/l</td>
<td>96 h</td>
<td>&gt; 3,200 mg/l - 96 h (OECD Test Guideline 203)</td>
</tr>
<tr>
<td>daphnia</td>
<td>static test EC50</td>
<td>Daphnia magna (Water flea)</td>
<td>324 mg/l</td>
<td>48 h</td>
<td>324 mg/l - 48 h (OECD Test Guideline 202)</td>
</tr>
<tr>
<td>algae</td>
<td>static test ErC50</td>
<td>Desmodesmus subspicatus (green algae)</td>
<td>&gt; 1,000 mg/l</td>
<td>72 h</td>
<td>&gt; 1,000 mg/l - 72 h (OECD Test Guideline 201)</td>
</tr>
<tr>
<td>bacteria</td>
<td>static test EC50</td>
<td>Pseudomonas putida</td>
<td>10,000 mg/l</td>
<td>18 h</td>
<td>10,000 mg/l - 18 h (DIN 38 412 Part 8)</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

Biodegradability
- aerobic
- Exposure time 28 d
- Result: 97% - Readily biodegradable
- (OECD Test Guideline 301A)

12.3 Bioaccumulative potential
- No data available

12.4 Mobility in soil
- No data available

12.5 Results of PBT and vPvB assessment
- PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties
- No data available

12.7 Other adverse effects
- Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
- Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
- Dispose of as unused product.

SECTION 14: Transport information

DOT (US)
Not dangerous goods

**IMDG**
Not dangerous goods

**IATA**
Not dangerous goods

**Further information**
Not classified as dangerous in the meaning of transport regulations.

### SECTION 15: Regulatory information

**SARA 302 Components**
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**
No SARA Hazards

**Massachusetts Right To Know Components**
No components are subject to the Massachusetts Right to Know Act.

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-methionine</td>
<td>63-68-3</td>
<td></td>
</tr>
</tbody>
</table>

**New Jersey Right To Know Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-methionine</td>
<td>63-68-3</td>
<td></td>
</tr>
</tbody>
</table>

### SECTION 16: Other information

**Further information**
Copyright 2020 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the
present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact mlsbranding@sial.com.

Version: 6.4  Revision Date: 03/26/2022  Print Date: 07/15/2023